

REMARKS

Upon entry of the claim amendments, Claims 1-14 will be all the claims pending in the application.

Applicants have made non-narrowing, editorial amendments to Claim 4.

New Claim 14 is supported by, for example, the description at the second full paragraph of page 4 of the specification.

No new matter has been added.

The Office Action contains a single rejection. Specifically, Claims 4 and 6-9 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 3,608,751 to Hundtofte ("US '751").

Applicants respectfully traverse. US '751 fails to:

- (a) disclose at least the (i) "largest dimension of the obstacles (5), perpendicularly to the axis of their related support, ranges between 0.25 and 0.75 times the diameter of the tube (1)" and (ii) "said obstacles (5) take up at least 80% of the lateral section of said tube" elements of the claimed invention; and
- (b) provide any motivation to modify its disclosure in order to arrive at elements (i) and (ii) of the claimed invention.

In addition, elements (i) and (ii) are not achievable via routine optimization in light of US '751.

With respect to (a) and (b) above, the Examiner agrees that US '751 does not disclose elements (i) and (ii) of the claimed invention. Applicants refer to lines 8-11 of the paragraph bridging pages 2 and 3 of the Office Action.

The issue, therefore, is whether US '751 provides the necessary motivation to modify its disclosure and arrive at elements (i) and (ii).

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US '751 fails to do so.

In this regard, the mere possibility that the prior art may be modified so as to arrive at the claimed invention does not render obvious the invention **unless the prior art suggested the desirability of the modification**. The suggestion to modify must be “clear and particular.” In re Sang Su Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433-1434 (Fed. Cir. 2002); Winner Int'l Royalty Corp. v. Ching-Rong Wang, 202 F.3d 1340, 1348-1349, 53 USPQ2d 1580, 1586-1587 (Fed. Cir. 2000).

US '751 does not provide a “clear and particular” suggestion, or even any suggestion at all, to modify its disclosure so as to include claimed elements (i) and (ii). Applicants have carefully reviewed the entirety of US '751's disclosure. Nowhere does US '751 identify a relationship between its blades and the cross-section of the tubes. Nowhere does US '751 specify that the blades should take up a particular percentage of the tube cross-section. Also, US '751 does not identify a relationship between the largest dimension of the blades and the diameter of the tube, from the perspective of perpendicularly to the axis of the blades' related support.

Furthermore, claimed elements (i) and (ii) are not achievable via routine optimization in light of US '751.

At lines 1-2 of page 3 of the Office Action, the Examiner asserts that “Hundtofte teach **size of the obstacle** to be an art recognized result effective variable depending on the type of material to be used.” (Emphasis added.)

Applicants respectfully disagree.

Applicants have closely reviewed US '751's disclosure and have been unable to identify a teaching that the “size of the obstacle” is a result-effective variable. In particular, Applicants are unable to identify a disclosure within US '751 teaching that the relationship between its blades and the cross-section of its tubes (i.e., that the blades should take up a particular percentage of the tube cross-section) is a result-effective variable. Applicants are also unable to identify a disclosure within US '751 teaching that relationship between the largest dimension of

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the blades and the diameter of the tube, from the perspective of perpendicularly to the axis of the blades' related support, is a result-effective variable.

As stated by the court in In re Antonie, 195 USPQ 6, 8 (CCPA 1977), recognition of a result-effective variable is essential to the obviousness of conducting experiments to determine the value of the variable which will maximize the particular result desired. Therefore, contrary to the assertion at page 3, lines 1-6, of the Office Action, discovering the optimum or workable ranges does not involve only routine skill where, as is the case here, the prior art does not recognize the variables (claimed elements (i) and (ii)) as being result-effective. Instead, US '751's failure to at all mention claimed elements (i) and (ii) leads to the conclusion that US '751 does not render obvious the inventions of Claims 4 and 6-9.

Reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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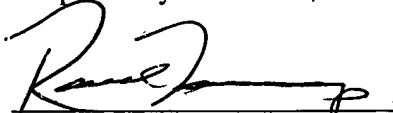
SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Respectfully submitted,



L. Raul Tamayo
Registration No. 47,125

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